

Amendments to the Drawings:

The attached sheet of drawings is a replacement sheet including Fig. 1. This sheet, which includes Fig. 1, replaces the original sheet including Fig. 1 and includes proposed drawing corrections filed on February 7, 2002, which were approved.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

The Office Action mailed March 5, 2004 has been reviewed and carefully considered. Claims 4 and 20 are canceled. Claims 1, 13, and 18 have been amended. Claims 1-3, 5-19, and 21 are pending in this application, with claims 1, 13, and 18 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

In the Office Action mailed March 5, 2004, the Examiner states that replacement drawings are required including the proposed drawing corrections filed on February 7, 2002, which are approved. Accordingly, replacement sheet of Fig. 1 with the label --Prior Art-- is attached hereto. The drawings now comply with the Examiner requirements.

Claims 1-3, 7, 11, 17, 19, and 20 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Patent No. 5,901,200 (Krause) in view of U.S. Patent No. 6,213,638 (Rattner) and FR 2 645 007 (Jarin).

Claim 5 stands rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, and Jarin in further view of U.S. Patent No. 3,281,598 (Hollstein).

Claim 6 stands rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, and Jarin in further view of U.S. Patent No. 3,784,837 (Holmstrom).

Claims 8, 10, 14, and 15 stand rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, and Jarin in further view of U.S. Patent No. 4,987,583 (Travanty).

Claim 9 stands rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, Jarin, and Travanty in further view of U.S. Patent No. 5,485,502 (Hinton).

Claim 12 stands rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, and Jarin in further view of Hinton.

Claims 13 and 21 stand rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, Jarin and Holstrom and further in view of U.S. Patent No. 5,410,584 (Schaefer).

Claim 16 stands rejected under 35 U.S.C. §103 as unpatentable over Krause, Rattner, Jarin and further in view of JP 11-285492 (Ninomiya).

Claim 18 stands rejected under 35 U.S.C. §103 as unpatentable over Rattner, in view of U.S. Patent No. 4,894,855 (Kresse), U.S. Patent No. 5,521,957 (Hanson) and Jarin.

The present invention relates to an X-ray device provided with an X-ray source and an X-ray detector which are mounted at different ends of a common holding device. The goal of the invention is to provide an X-ray device that is as flexible as possible (see page 2, lines 1-3 of the specification). Figs. 4a and 4b of the present specification show an embodiment of the invention in which a support device has seven connection pieces A₁ to A₇ connected to one another by respective hinges G₁ to G₆ (see page 5, lines 3-7). Each of the hinges G₁ to G₆ enables rotation about an axis of rotation such that the supporting device is rotatable about six separate axes (page 5, lines 7-9). The specification defines this embodiment as a 6-axes flexible arm robot.

Claim 18 originally recited a support device comprising “6-axes flexible arm”. However, the Examiner interpreted this broadly to include any arm that is adjustable in 6 axes (see the last paragraph on page 13 of the office action). The limitation amended to clarify that the support device includes “serially interconnected supporting members connected by six hinges, each of the hinges enabling rotation about an axis of rotation so that the supporting device has six separate axes of rotation”. Support for this amendment is in Figs. 4a and 4b and at

page 5, lines 3-15 of the specification. Independent claims 1 and 13 are also amended to include this limitation.

It is respectfully submitted that none of the art of record discloses a support device for an X-ray holder having six hinges, each enabling rotation thereabout, as now expressly recited in independent claims 1, 13, and 18.

Krause discloses in Fig. 2, a support device for an X-ray device having three hinges for three separate axes of rotation A, B, C. Rattner discloses a support device for an X-ray device having five (5) hinges. Jarin discloses a support device having two hinges for rotation about two separate axes 12, 14. Hollstein discloses a support device having two hinges for rotation about two separate axes. Holmstrom discloses a support device having one hinge. Travanty discloses a support device having two hinges. Hinton discloses collision avoidance in an X-ray device having a common holding device for the X-ray source and the detector. Hinton does not disclose a specific embodiment for a support device of the common holder. Schaefer discloses another X-ray device in which the X-ray source and the detector are held on a common C-arm connected to a second C-arm. Schaefer does not disclose a support device with a plurality of hinges. Ninomiya discloses an X-ray device having a common C-arm holder for the source and detector and does not disclose a support device for the C-arm having a plurality of hinges. Kresse discloses an X-ray device in which the source and detector are not arranged on a common holder. Hanson discloses another X-ray device with a support device having four hinges.

Accordingly, only Krause, Rattner and Hanson disclose support devices having more than two hinges. However, these references lack any motivation, teaching or suggestion for including six separate hinges, each providing a separate axis of rotation. Krause discloses an X-ray apparatus which may be used for both stationary and mobile mounting. The goal of

Krause is to allow improved access when the apparatus is used with a mobile base (see col. 1, lines 33-36 of Krause. Accordingly, there is no motivation for providing further hinges for improved flexibility. Rattner discloses an X-ray apparatus in which the goal is to enable movement along a line in space in a linear fashion (see col. 1, lines 62-65 of Rattner). Since the goal of Rattner is accomplished by the support device with five hinges shown in Fig. 1, Rattner fails to provide any motivation for providing a support device having six hinges, as expressly recited in the present invention. Hanson discloses an X-ray apparatus with a support device connected to a mobile base, the support device having four hinges. The goal of Hanson is also to provide a X-ray apparatus that is movable along a line parallel to the patient (see col. 1, lines 53-57 of Hanson). Since this is accomplished by the four hinges disclosed by Hanson, there is no motivation for providing a support device having six separate hinges, as expressly recited in independent claims 1, 13, and 18. In view of the above amendments and remark, independent claims 1, 13, and 18 are allowable over the prior art of record.

Dependent claims 2-3, 5-12, 14-17, 19, and 21, each being dependent on one of independent claims 1 and 13, are allowable for at least the same reasons as independent claims 1 and 13.

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

It is believed that no fees or charges are currently due. However, if any fees or charges are required at this time in connection with the application, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

By 

Michael C. Stuart

Reg. No. 35,698

551 Fifth Avenue, Suite 1210

New York, New York 10176

(212) 687-2770

Dated: June 7, 2004